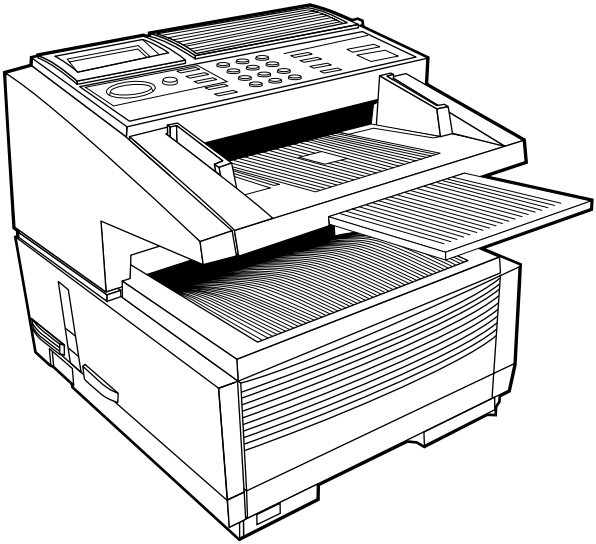
Internet Fax
and
Network Print/Network
Scanner Kit



User's Guide

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CE

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Energy Star

As an Energy Star Partner, the manufacturer has determined that this product meets the Energy Star guidelines for energy efficiency.

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Introduction

This user's guide describes how to install and configure the Internet Fax and network printer/scanner kit into a fax machine. After installing this kit, the following functions are available for use:

- Print through a local area network (LAN).
- Send and receive Internet fax messages.
- Network scanner
- Gateway services

For installation into a fax machine of the printed circuit board required for the Internet Fax and network printer/scanner kit, please refer to the quick installation guide for the network print kit.

Supported systems

Supported LAN systems (topologies) are as follows.

- 10base-T Ethernet.
- 100base-TX Ethernet (Fast Ethernet)

Supported operating systems for the printer driver are as follows:

- Windows3.1
- Windows95/98
- WindowsNT4.0
- Windows2000
- NetWare3.x
- NetWare4.x

Note: Macintosh and UNIX operating systems are not supported.

Supported protocols

Supported network print protocols are as follows:

- TCP/IP
- IPX/SPX
- NetBEUI

Supported Internet fax protocols are as follows:

- TCP/IP
- SMTP
- POP3
- DNS

Supported management protocols are as follows:

- SNMP
- MIB

Internet Fax

Internet fax settings

General

Before using Internet Fax, consult with the network administrator about correct network settings.

There are two types of setting values for Internet Fax, which are as follows:

- Data stored on the fax machine.
- Data recorded on the network card.

To print out a list of the setting values on the fax machine, using the control panel of the fax machine, select MENU, then select 9:REPORT PRINT and then select 6:CONFIGURATION.

To print out the settings stored on the network interface card (NIC) or its current status using the control panel of the fax machine, select MENU, then select 9:REPORT PRINT and then select 9:NIC CONFIGURATION. Alternatively, select MENU, then select 9:REPORT PRINT and then select 10:NIC INFORMATION.

Alternatively, if the black push button on the NIC is pressed for 3 seconds and released, a report similar to that obtained from the NIC INFORMATION menu is printed out together with a NIC self-diagnostic report.

Note: If power is turned on on while pressing this button down, the network card will initialise its settings.

Please refer to manual for the network card, supplied on the CD, in conjunction with this guide as it explains how to use the network card. Please note, however, that the descriptions in the NIC manual are based on where the network card is installed in a LED printer and that operations described in the manual may not apply to this Internet Fax. The network card manual does not explain the functions of Internet Fax. The network card settings explained in the manual for network print do apply to the fax machine.

Settings

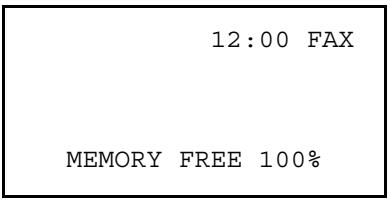
Internet Fax settings can be viewed by selecting MENU, then 11:SETUP and then 7:LAN OPTIONS.

When 7:LAN OPTIONS is selected, the display shows user functions 80 to 93. User functions 80 to 82 are for network printing. Details of these settings are given in Network Printing.

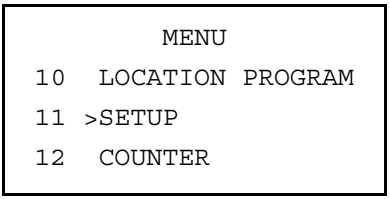
User functions from 83 onward are for Internet Fax and will not be displayed if the network card does not have an Internet Fax facility.

User function 93 (NETWORK SETTINGS) is for configuring the network card. These settings are explained in detail further on this user's guide and can be changed over a network using various tools.

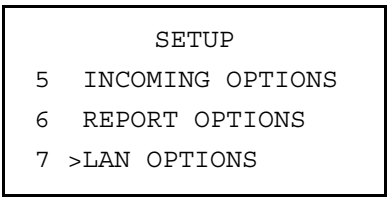
Operation overview



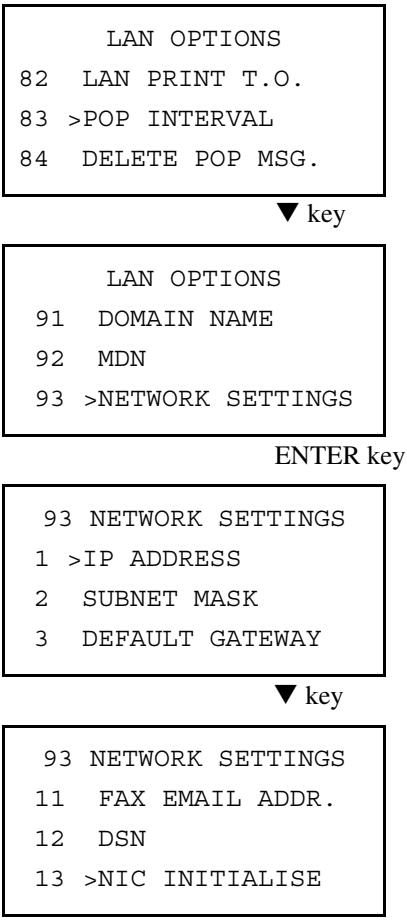
MENU key and ▼ key



ENTER key and ▼ key



ENTER key



User functions

83:POP INTERVAL - Intervals when the fax machine polls the server for any incoming e-mail (POP reception). 0 to 60 minutes, adjustable by the minute. If set to 0, no automatic polling is carried out.

84:DELETE POP MSG - Whether or not to delete received e-mail from the mail server. The settings are:

OFF:	Do not delete e-mail
TYPE1:	Only delete e-mail messages after printing
TYPE2:	Delete all e-mail

Note 1: *If a setting other than TYPE2 has been selected, e-mail remains on the server. Make sure e-mail is deleted from the server manually, e.g., from another PC.*

Note 2: *This fax machine keeps a log of up to 50 communications, which is used to prevent any e-mail messages that have already been read from being received again. However, if there are more than 50 messages on the server, you may start receiving the same e-mail messages repeatedly. When e-mail messagees have been deleted from the mail server using a PC, manually activate POP reception on the fax machine while there is no mail. This operation erases the log of the previous 50 communications. If automatic POP reception is carried out while there is no mail, the log is also erased. Therefore, if regularl deletions of mail is carried out on the server before the number of records on the log reaches 50, this operation will not be necessary.*

85:TIME BETWEEN GMT - Time difference from GMT. This value is required in order to create e-mail headers. The time difference must be set.

86:TEXT PRINT - Whether or not to print the body text of email. If this setting is ON, the text in an e-mail message is printed out. Please note that only US-ASCII characters in the text can be printed as shown in the following table. Any characters that cannot be printed will be shown as spaces. Depending on the e-mail client used, text may not be printed or come out garbled.

	00	10	20	30	40	50	60	70	80	90	A0	B0	C0	D0	E0	F0
0			SP	0	@	P	`	p								
1			!	1	A	Q	a	q								
2			“	2	B	R	b	r								
3			#	3	C	S	c	s								
4			$	4	D	T	d	t								
5			%	5	E	U	e	u								
6			&	6	F	V	f	v								
7			‘	7	G	W	g	w								
8			(	8	H	X	h	x								
9			)	9	I	Y	i	y								
A			*	:	J	Z	j	z								
B			+	;	K	[	k	{								
C			,	<	L	\	l	|								
D			-	=	M	]	m	}								
E			.	>	N	^	n	~								
F			/	?	O	_	o									

87:HEADER PRINT - E-mail header print setting.

OFF:	Do not print header
TYPE1:	Print SUBJECT/FROM/TO
TYPE2:	Print all header information

This setting is only valid when the TEXT Print setting is ON.

88:CODING MODE - Coding mode for TIFF file images sent by Internet Fax. Select from MH/MR/MMR. Please note that other manufacturers' Internet Fax products often support only MH. This machine supports MR and MMR modes in addition to MH. The rate of compression is MH (low); MR (medium); MMR (high).

89:EX.FINE MODE - Scan resolution of EX.FINE mode for Internet Fax: 300 dpi or 600 dpi.

90:IFAX SENDER ID - Whether or not to add the sender ID to images scanned by Internet Fax. This setting will always apply when using Internet Fax, regardless of the setting for 23:SENDER ID ON/OFF. When using Internet Fax as a scanner, turn this setting OFF to prevent the sender ID data from appearing in scanned images.

91:DOMAIN NAME - This setting is required when forwarding e-mail received by SMTP to PSTN/ISDN. Up to 5 domain names, each up to 64-characters long, can be entered from which data may be received. When an SMTP reception request is received, the e-mail is only received if the sender's domain name matches one of the registered domain names. If there is no match, the fax machine assumes that the e-mail cannot be received by Internet Fax and will not start reception. For example, if only network.com is registered, only e-mail from the domain network.com or its sub-domain will be received.

*Note: Latin letters, numbers and symbols are assigned to one-touch keys. Also, symbols can be entered using either one-touch key 20 or numeric key 0. The symbols available are ! # & ' ( ) * + , - . / : ; = ? · @ ” _ % ~ . The "~" (tilde) symbol will appear on the LCD as "-1". Both upper and lower case letters can be used. To switch between cases, press one-touch key 31 (CAPS key).*

92:MDN (Message Disposition Notification) - Whether or not to add MDN to transmissions. MDN is a request for confirmation on whether or not the message has been read. If the recipient is an Internet Fax or a mail client that supports MDN, it will return this confirmation. The format of the notification varies depending on the type of the receiving Internet Fax

or mail client. If the recipient is the same Internet Fax machine, notification in the following RFC compliant format will be transmitted.

Note 1: This setting determines whether or not an MDN request will be sent with transmission. When this fax machine receives e-mail accompanied with an MDN request, it will always return MDN to the sender regardless of this setting.

Note 2: If a file other than the TIFF formats compatible with this Internet Fax is received and the REPORT setting under 73:ERR. REPORT (MCF.) is ON, error MDN will be returned to the sender automatically regardless of the MDN setting.

Note 3: When this setting is ON, the recipient of a transmission returns a MDN. To print a MDN, the TEXT PRINT setting must be ON.

Example of MDN format is as follows:

```
Subject: Automatic Disposition Notification
(processed) - hello!

The message you sent on Wed, 19 Jan 2000 15:28:28
+0900 regarding "hello!" has been processed by
abc@network.com.

Final-Recipient: rfc822; abc@network.com

Original-Message-ID:
<3885598C.E47DF614@fax.nework.com>

Disposition: automatic-action/MDN-sent-
Automatically; processed
```

Note: Some mail clients and Internet Fax products that are currently on the market are unable to receive this MDN format correctly.

93:NETWORK SETTINGS - By selecting this user function, the following network settings can be altered.

Note 1: After making changes to these settings, press the MENU key to put the fax machine into stand-by mode. After a few seconds' pause, the LCD will indicate that the network card is being initialised and the data on the network card will be updated when this message disappears. Do not press the MENU key again while the initialisation message is displayed as it may prevent the settings from being updated correctly.

Note 2: Latin letters, numbers and symbols are assigned to one-touch keys. Also, symbols can be entered using either one-touch key

*20 or numeric key 0. The symbols available are ! # & ' ( ) * + , - . / : ; = ? · @ ” _ % ~ . The "~" (tilde) symbol will appear on the LCD as "-1". Both upper and lower case letters can be used. To switch between cases, press one-touch key 31 (CAPS key).*

- 1:IP ADDRESS - Sets the IP address.
- 2:SUBNETMASK - Sets the subnet mask.
- 3:DEFAULT GATEWAY - Sets the default gateway address.
- 4:SMTP SERVER NAME - Either the IP address or the host name of the SMTP mail server up to 64 characters may be entered here. The host name (e.g. mail.network.com) can be used if DNS has been set; otherwise, enter the IP address of the server. The address must include the "." (period) dividers (e.g. 192.168.004.123).
- 5:POP SERVER NAME - Either the IP address or the host name of the POP mail server up to 64 characters may be entered here. The host name (e.g., mail.network.com) can be used if DNS has been set; otherwise, enter the IP address of the server. The address must include the "." (period) dividers (e.g., 202.250.111.123).
- 6:POP USER ID - Enter the user ID registered on the POP3 server, which must be alphanumerical characters no more than 16 characters long.
- 7:POP PASSWORD - The password registered on the POP3 server may be entered, which must be alphanumerical characters no more than 16 characters long. If a password has already been registered, it will be shown as 16 Xs to ensure that it will remain protected.

Note: 6:POP USER ID and 7:POP PASSWORD settings in the fax machine must match the POP3 user name already entered in the server

- 8:DNS P. SRV ADDRESS (Domain Name Service Primary Server) - Sets the IP address of the DNS primary server. This will not be required if the server is connected directly using its IP address.
- 9:DNS S. SRV ADDRESS (Domain Name Service Secondary Server) - Sets the IP address of the DNS secondary server. Enter this setting only if a secondary server has been set up.
- 10:HOST NAME - Enter the host name defined on this machine. Maximum length: 64 characters.

- 11:FAX Email Address - Enter the email address defined on this machine. Maximum length: 64 characters.
- 12:DSN (Delivery Status Notification) - If a mail server that has a DSN function receives a message, it will send a delivery confirmation to the sender of the message. If the mail server receiving the message does not support DSN, it is advisable to change this setting to OFF as the server may not be able to handle the message correctly and cause a communication error. However, some servers can send mail to mail servers which do not support DSN function and no delivery notification will be sent in this case.

Note 1: For this fax machine to receive a delivery notification, the TEXT PRINT setting must be turned on.

Note 2: When a message is sent with this setting ON, the recipient of the transmission returns a MDN. To print it, the TEXT PRINT setting must be ON.

- 13:NIC INITIALIZE - Initialises the network card back to its original factory settings.

Note: No warning message will be given if this option is selected. Please check carefully before carrying out this operation.

Web access

This fax machine is web capable and its network settings can be changed through a web browser such as Internet Explorer or Netscape Navigator. In addition to the Internet Fax settings explained above, the settings listed below can also be changed. Also refer to the network card manual, which contains detailed information about these settings, but note that the contents of the web page accessed will be slightly different from the page for the network card that does not support Internet Fax. These differences are also explained below.

- Printer Status - The main web access screen. Shows the message given on the LCD display of this machine.
- Network Status - Shows the status of TCP/IP, NetWare and NetBEUI.
- TCP/IP - See the manual for the network card.
- NetWare - See the manual for the network card.
- NetBEUI - See the manual for the network card.
- EtherTalk - Not supported by this machine. Do not alter this setting.

- SNMP - See the manual for the network card.
- Internet Fax - The settings explained above can be entered here in addition to the following items, which are accessible only through the web:

  (a) SMTP Transmit: Whether or not to enable SMTP transmission protocol. For normal operations, this setting should be left at ENABLE.

  (b) SMTP Receive: Whether or not to enable SMTP reception protocol. This should normally be set at ENABLE. If you do not wish to receive by SMTP, change this setting to DISABLE.

Note: SMTP reception is used to forward incoming mail by FAX.

  (c) POP3: Whether or not to enable POP reception protocol. For normal operations, this setting should be left at ENABLE.

  (d) SMTP port number: SMTP protocol port number. The default setting is 25. Do not change it unless necessary.

  (e) POP port number: POP protocol port number. The default setting is 110. Do not change it unless necessary.

  (f) Use APOP: Available when using a POP server that supports APOP. With APOP, the POP password will be encrypted before it is sent. If this setting is turned on when using a server, which does not support APOP, it will cause a communication error.

- Printer Menu (Paper and Trays, Timers and Alarms, Emulations) - This menu will not be displayed for this fax machine. Even if the printer menu is displayed, the settings cannot be changed.

Note: If any changes are implemented using a web browser, then the user is requested to enter their username and password . The default username is ROOT and the default pass word is the last six digits of the MAC address for the network card. These settings can be modified using Admin Manager.

Admin manager

Using Admin Manager, the network card can be configured through Windows95/98/NT4.0 via the network. The settings available through Admin Manager are mostly the same as those accessible through the web. Also refer to the network card manual, which contains detailed informa-

tion about these settings, but, like web access, there are some differences from the network card that does not support Internet Fax. The following section explains the tabs within Admin Manager.

When Admin Manager is started, it first shows a list of network cards connected to printers and fax machines. Check the MAC addresses to select which network card is to be configured. The MAC address is shown on the network card report explained earlier. Select the network card for configuration and go to MENU ▶ Setup ▶ Device Setup. The following settings can be changed:

- General - Set the password.
- TCP/IP - The following settings can be changed:
  - (a) Enable DHCP/BOOTP or RARP.
  - (b) IP Address, Subnet mask and Default Gateway.
  - (c) Enable Banner for FTP/LPR.
  - (d) DNS settings
- NetWare - NetWare server settings. For details, refer to the network card manual. Please note that the position of the Pserver menu is different for Internet Fax and the method for setting Pserver NDS and Bindery. Also refer to the help menu of the tool.
- EtherTalk - Not used by this machine.
- NetBEUI - See the manual for the network card.
- SNMP - See the manual for the network card.
- The Printer TRAP facility of the tool supplied with Internet Fax has been expanded. Up to 5 addresses can be added in TCP/IP as Printer Traps and also an extra address in IPX/SPX, for which trap alarms can be specified individually. Also refer to the help menu of the tool.
- Internet Fax - The settings accessible through the web can also be changed here.

Telnet

As this fax machine is Telnet capable, the network settings can be changed using Telnet via the network. Also refer to the network card manual, which contains detailed information about these settings, but, like web access, there are some differences from that does not support Internet Fax.

Internet fax transmission

Registering addresses

E-mail addresses up to 64 characters long can be assigned to one-touch keys 01 to 40. It is also possible to make up a group of email addresses and assign to one-touch dial numbers, but one-touch dial numbers for both email addresses and telephone numbers cannot be assigned to a single group.

*Note 1: Latin letters, numbers and symbols are assigned to one-touch keys. Also, symbols can be entered using either one-touch key 20 or numeric key 0. The symbols available are ! # & ' ( ) * + , - . / : ; = ? · @ ” _ % ~ . The "~" (tilde) symbol will appear on the LCD as "-1". Both upper and lower case letters can be used. To switch between cases, press one-touch key 31 (CAPS key).*

Note 2: Even if the fax machine has 80 one-touch keys, only one touch keys 01 to 40 can be used for e-mail addresses.

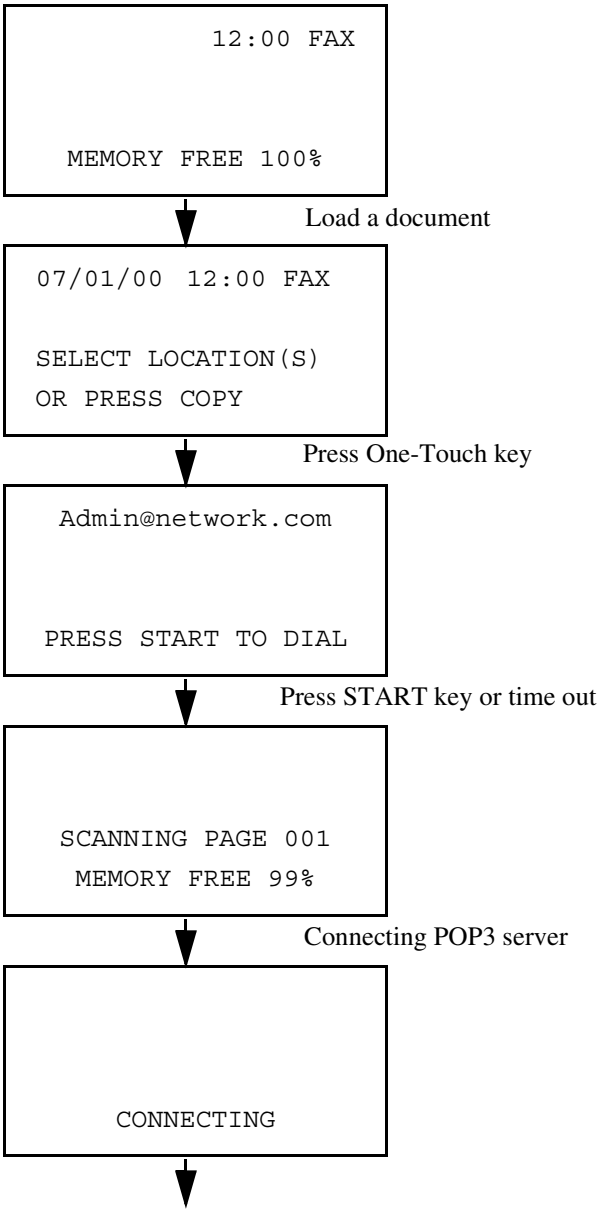
Sending a document

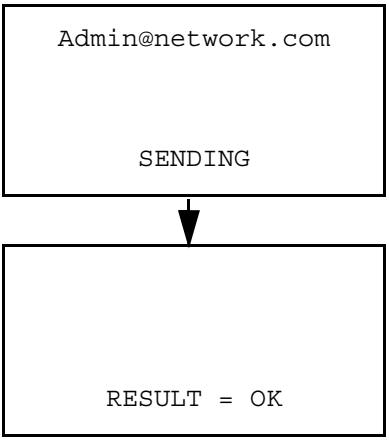
Place a document on the machine, press the one-touch key on which the recipient's email address is assigned and press Start. After storing the document's image data in memory, the machine will establish a server connection. When this is done, the SENDING message will be displayed. At the end of the transmission, the result will be displayed on the LCD and a buzzer will sound. A document can be sent to several e-mail addresses by pressing the one-touch keys on which they are assigned, but cannot send to recipients with telephone numbers registered on one-touch keys. If the same e-mail address is selected twice, the document will be sent only once. To specify the full e-mail addresses, select MENU, then select 6:INTERNET FAX and then select 1:INTERNET TX to enter each e-mail addresses individually.

To stop transmission, press the Stop key. Please note that the transmission will be terminated at once without asking for confirmation.

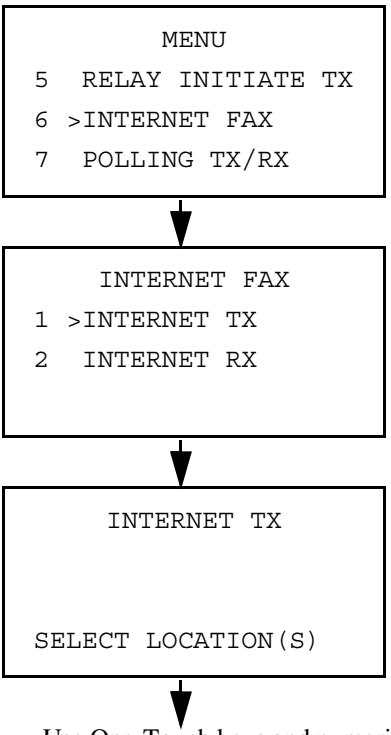
Internet Fax data is scanned into memory before transmission. If the document is too large to fit into memory, divide it up and make two or more transmissions. The installation of an add-on memory is recommended if large documents are normally sent.

Internet fax transmission flow

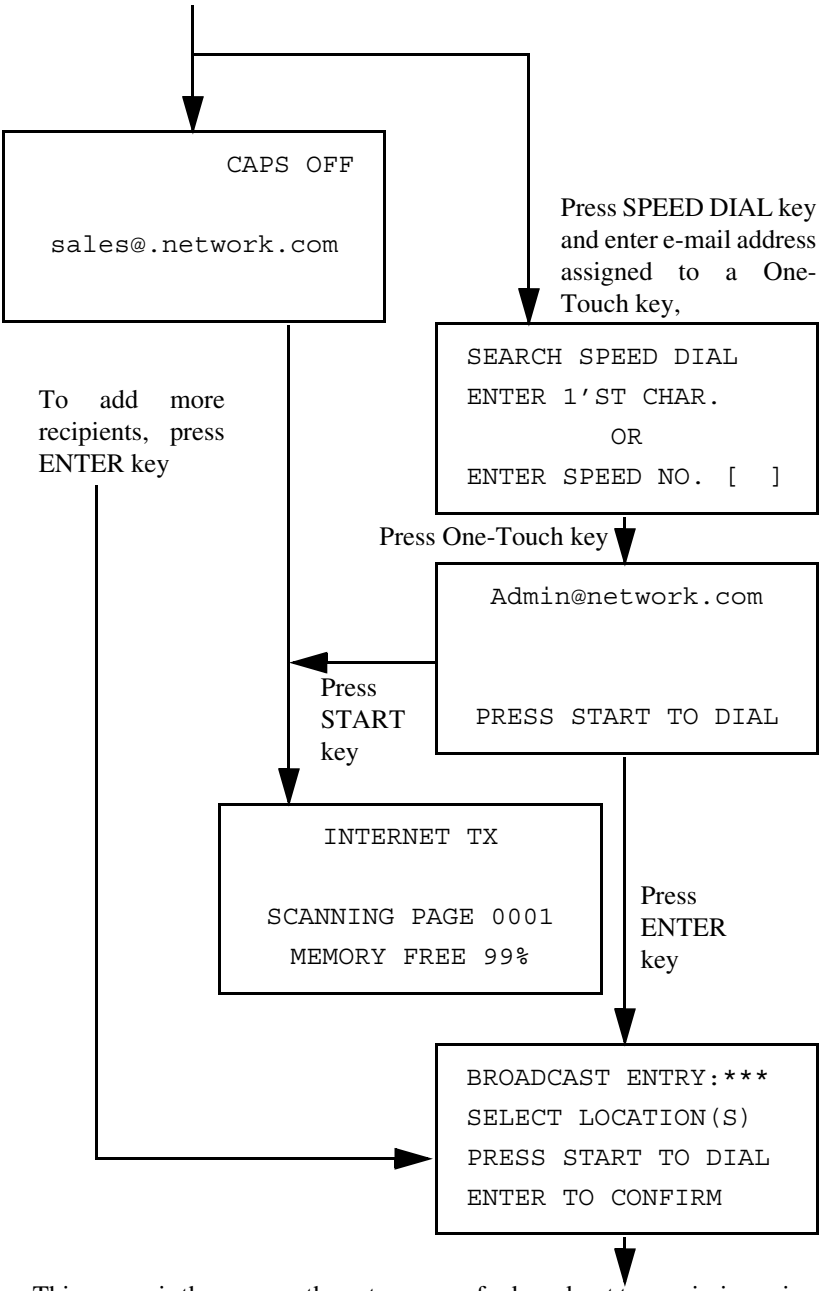




Internet fax transmission flow - specifying recipients



Use One-Touch keys and numeric keys to enter full e-mail address.



This screen is the same as the entry screen for broadcast transmission using telephone line. Please refer to user guide for fax machine for details.

Tiff images

InternetFAX converts scanned documents into a single TIFF-format file and sends it by e-mail. This machine can transmit at a resolution of 200 x 100 dpi in STD mode, 200 x 200 dpi in FINE mode, 300 x 300 dpi or 600 x 600 dpi in EX-FINE and 200 x 200 dpi in PHOTO mode. The images are compressed using one of the standard formats used on faxes: MH, MR or MMR.

Note: 600 x 600 dpi in EX-FINE and MMR settings can be changed.

Many Internet Fax products offered by other manufacturers can receive only in the STD and FINE resolutions and in MH compression mode. Please note this point if sending a document to an Internet Fax of a different make, but is not be a problem if sending to the same type of Internet Fax or to a PC. This Internet Fax attaches the following mail text as it sends a fax document.

```
There is a TIFF in this mail, which has been sent
from an Internet Facsimile.


You can see the TIFF file by using Imaging of
Windows NT4.0/Windows 95 (OSR 2)/Windows 98/Windows
2000
-------------------------------------------
#Imaging, Windows NT4.0, Windows 95 (OSR 2), Windows
98, Windows 2000 are registered trademarks of US
Microsoft Corporation
```

Tiff viewer

In order to view Tiff files sent by this fax machine, it is necessary to have a Tiff Viewer installed on the PC. Microsoft Windows 95, 98, NT4.0 and 2000 have a viewer called Imaging, through which Tiff files can be viewed.

Note: Before printing a Tiff file from Imaging, go to OPTIONS in either the Print screen or in Properties and set the Print format to "Fit to Page". If it is set at "Actual size", part of the fax image may be cut off from the print out.

Internet fax reception

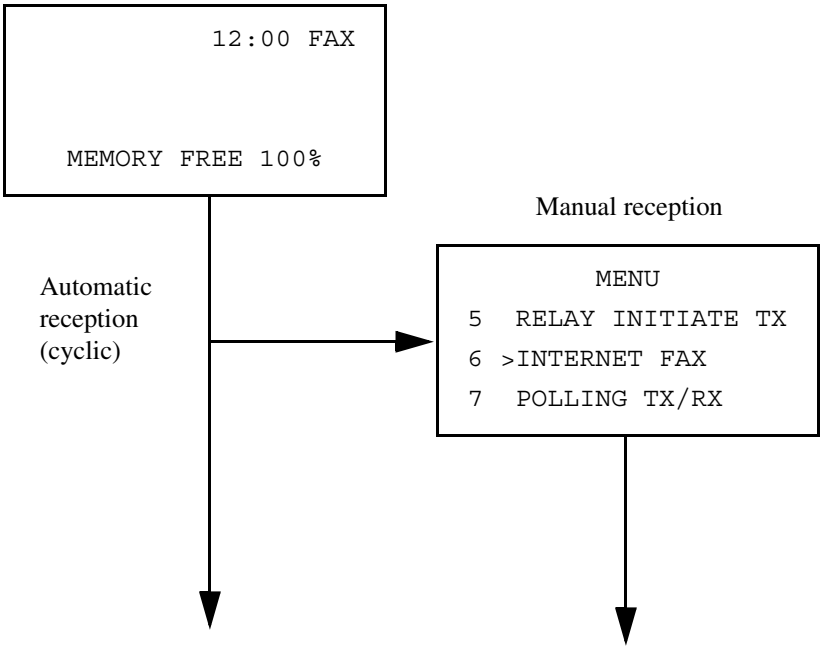
This fax machine automatically connects to the server to receive mail according to the POP INTERVAL TIME setting. If there is mail on the server, reception will start automatically. If there is more than one mail message, it will receive all the messages and print them out. However, if the TEXT PRINT setting is ON, it will receive only one message in each reception.

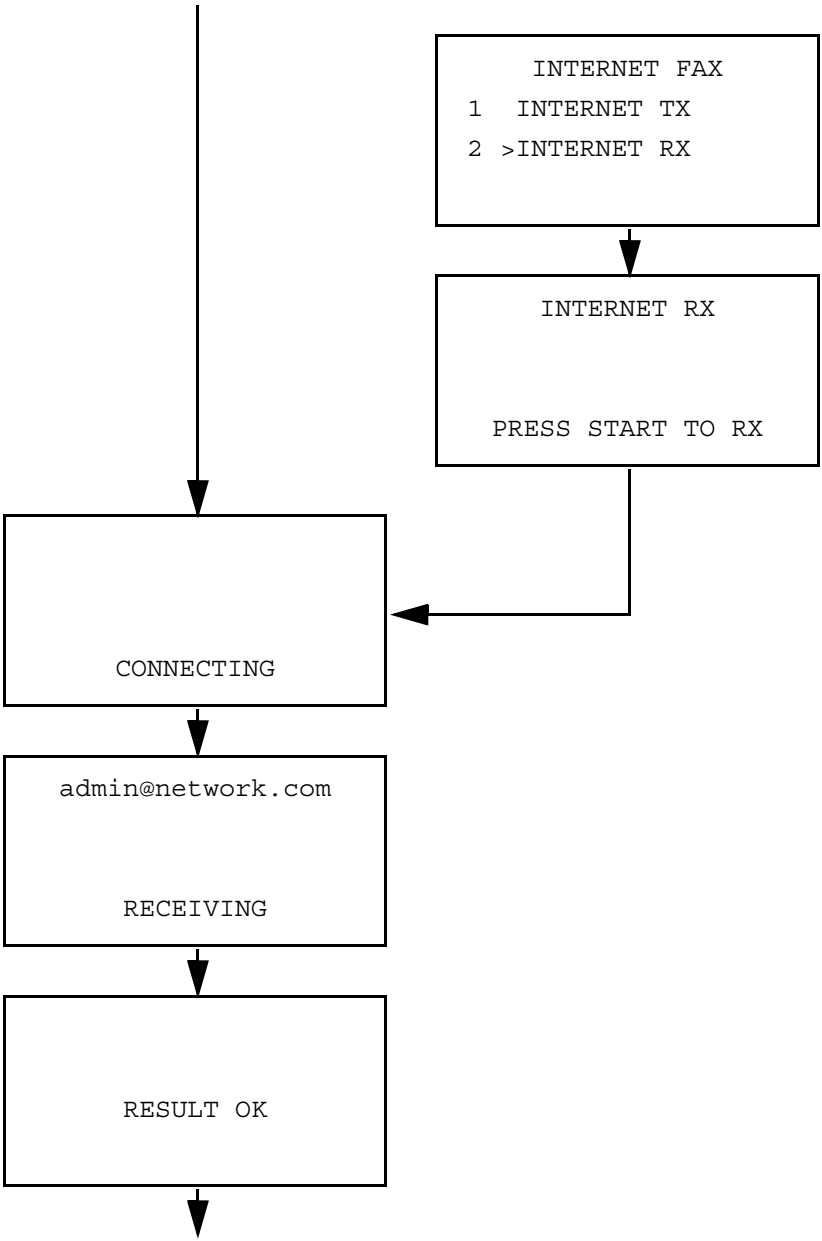
Manual reception of mail is done by selecting MENU, then 6:INTERNET FAX, then 2:INTERNET RX, then pressing Enter and Start.

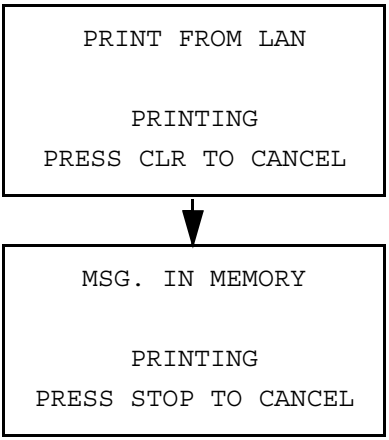
If automatic reception takes place and there is no mail, no record of the transaction will be made. In the case of manual reception, service code F941 will be recorded if there is no mail.

Note 1: Internet Fax receives mail in memory. Check to make sure that there is a sufficient free memory space to receive fax messages. If there is not, reception of a message may be terminated before reception is completed.

Note 2: If the TEXT PRINT setting is ON, no recption is possible while there is a print alarm (e.g., no paper, cover open, paper jam).




INTERNET FAX
1 INTERNET TX
2 >INTERNET RX
INTERNET RX
PRESS START TO RX
CONNECTING
admin@network.com
RECEIVING
RESULT OK



Text received while TEXT PRINT setting is ON.

Printing of received TIFF file.

Receiving Tiff file

This fax machine receives mail messages with Tiff format attachments in the mail server and prints out the attached files. This fax machine can print out Tiff files in the Simple Mode defined in ITU-T T.37. It can also receive files at the 300 x 300 dpi, 600 x 600 dpi or 200 x 400dpi resolutions and files in MR or MMR compression mode. It cannot print out files of any other Tiff-formats and, if it receives such a file, a communication error will occur and an error report will be printed.

Note 1: Files at 600 x 600 dpi resolution cannot be received without an optional 8M memory installed.

Note 2: Only Tiff files created by Imaging can be received by the Internet Fax.

Receiving text

Body text of an e-mail can be printed by turning the TEXT PRINT setting ON. E-mail from an Internet Fax often comes with added messages (text) before and after the Tiff file and this function can be used to print these messages out. The table below shows the characters that can be printed out by this machine.

	00	10	20	30	40	50	60	70	80	90	A0	B0	C0	D0	E0	F0
0			SP	0	@	P	`	p								
1			!	1	A	Q	a	q								
2			“	2	B	R	b	r								
3			#	3	C	S	c	s								
4			$	4	D	T	d	t								

	00	10	20	30	40	50	60	70	80	90	A0	B0	C0	D0	E0	F0
5			%	5	E	U	e	u								
6			&	6	F	V	f	v								
7			‘	7	G	W	g	w								
8			(	8	H	X	h	x								
9			)	9	I	Y	i	y								
A			*	:	J	Z	j	z								
B			+	;	K	[	k	{								
C			,	<	L	\	l	|								
D			-	=	M	]	m	}								
E			.	>	N	^	n	~								
F			/	?	O	_	o									

To print out the information in the mail header, set TEXT PRINT to ON. This fax machine can print only plain format text that has not been encoded by Base64 etc. If e-mail messages or text-file attachments have been encoded, printouts may be garbled.

Gateway services

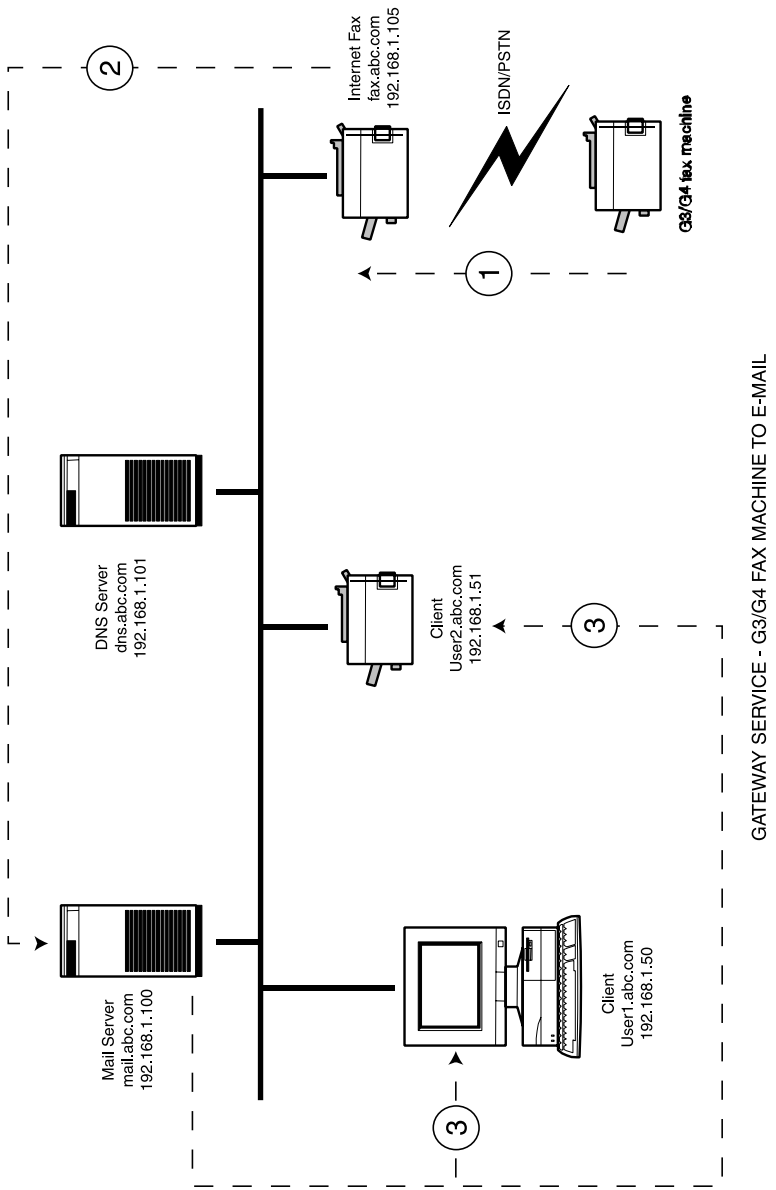
Fax to e-mail

This fax machine can forward incoming fax messages from a G3/G4 fax machine to an e-mail address. To do this, create a personal mailbox as a relay mailbox. Then register a one-touch key, which has an e-mail address assigned to it, in the relay mailbox. Any fax image that is sent to this relay mailbox will then be forwarded to the assigned email address upon reception. For details of the forwarding operation, please refer to the user guide for the fax machine.

Note: Please check the user guide of the fax machine to see if the fax machine is capable of relay broadcasting.

The following illustration gives a diagrammatic view of how a fax to e-mail gateway operates:

1. G3/G4 fax machine sends the fax message to the Internet Fax.
2. The Internet Fax then converts the message to an e-mail and forwards it onto a mail server.
3. The mail server the sends the e-mail onto a computer or another Internet Fax.


Internet Fax
fax.abc.com
192.168.1.105
ISDN/PSTN
G3/G4 fax machine
2
1
DNS Server
dns.abc.com
192.168.1.101
Client
User2.abc.com
192.168.1.51
3
Mail Server
mail.abc.com
192.168.1.100
Client
User1.abc.com
192.168.1.50
3
GATEWAY SERVICE - G3/G4 FAX MACHINE TO E-MAIL

E-mail to fax

Images received by e-mail can be forwarded by Internet Fax to any G3/G4 fax machine. Internet Fax carries out this operation using SMTP reception. However, this function is not supported by a POP server.

When forwarding an e-mail message to a fax telephone number through Internet Fax, the e-mail address must be in the format FAX=[telephone number]@[domain name]. The message can only be sent as an attachment in Tiff format and there must be no subject or text used in the e-mail.

Note: Internet Fax can only accept attachments in Tiff format RFC2301 standard (TIFF S).

The telephone number must be entered using numbers 0 to 9 and characters *, #, -, P and +. If anything else is entered, the fax machine will not receive the message. The telephone number must not be more than 40 digits long.

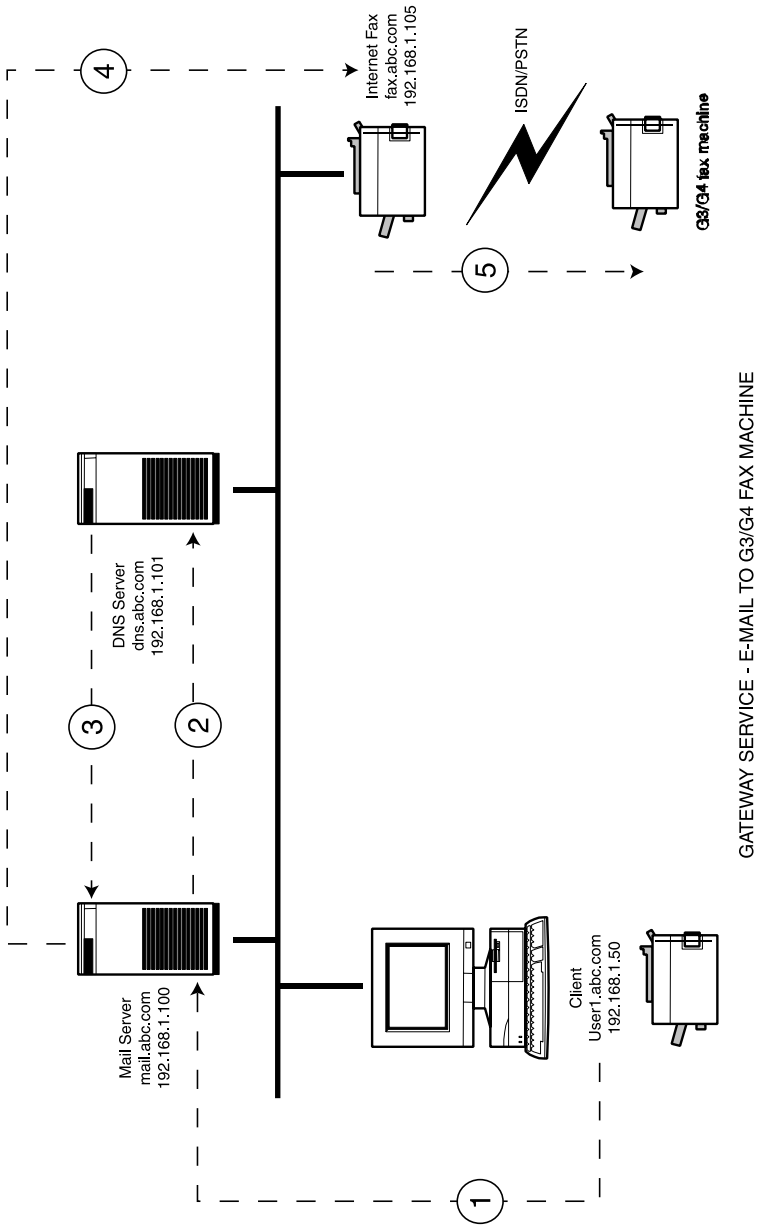
The exact mail address format required for e-mail to fax forwarding varies from one network to another. Consult with the network administrator about the correct format to use. For example, if the host name of Internet Fax has been defined as "intfax" with a domain name of "network.com", enter FAX=[telephone number]@intfax.network.com as the e-mail address. The mail server and Internet Fax then uses this mail address for forwarding the message.

To use this function, domain names must be registered from which data may be received for fax forwarding. This prevents unauthorised access of the e-mail forwarding function. Up to 5 domain names can be registered, each up to 64 characters long. Any data for forwarding will only be accepted by the fax machine if the sender's domain name matches one of the registered domain names, or a sub-domain name of a registered domain name.

Note: Refer to Appendix B for information on mail routing.

The following illustration gives a diagrammatic view of how e-mail to G3/G4 fax machine gateway operates:

1. The client sends a message to the mail server using the address format FAX=123@fax.abc.com. A client can be a computer or an Internet Fax.
2. The mail server makes an enquiry to the DNS server about fax.abc.com.


GATEWAY SERVICE - E-MAIL TO G3/G4 FAX MACHINE
Mail Server
mail.abc.com
192.168.1.100
DNS Server
dns.abc.com
192.168.1.101
Client
User1.abc.com
192.168.1.50
Internet Fax
fax.abc.com
192.168.1.105
ISDN/PSTN
G3/G4 fax machine
1
2
3
4
5

3. The DNS server replies to the mail server with the IP address of fax.abc.com.
4. The mail server forwards the message onto the Internet Fax.
5. The Internet Fax then forwards the message onto a G3/G4 fax machine with the telephone number of 123.

Network scanner

This fax machine can be used as a network scanner. Scanning is carried out as if sending an Internet Fax, but specifying the email address to which the scanned document should be sent. The recipient of the transmission, then receives the document on their PC as a TIFF file. Resolution of the TIFF file can be set to a maximum of 600 x 600 dpi in EX-FINE mode to create a high-quality scanned image file.

Note: The resolution of the scanned image can be set between 300 and 600 dpi through the user function 89:EX.FINE MODE.

When using this fax machine as a scanner, set 90:IFAX SENDER ID to OFF so that the sender ID will not be added at the top of the document.

Troubleshooting

Service codes

If a communication error occurs, check the service code shown on the Activity Report.

SMTP communications

The service code for a SMTP communication is prefixed with the letter E, followed by a three-digit SMTP error code defined by RFC. Error codes from E900 and above are codes defined specifically for this Internet Fax.

E001: Text print
E002: Text received but not printed
E900: Network Card I/F error
E910: TCP/IP or SMTP/POP not supported or allowed by network card
E920: Network card not ready; transmission request received while network card is initialising (redial)
E930: No match for domain received; invalid user name

E931: E-mail cannot be received (invalid TIFF)
E932: E-mail cannot be received (other than invalid TIFF)
E940: Memory full
E942: Command time-out
E950: Server communication error
E980: Aborted

Note: For service codes E001 and E002, the number of pages in the report will be left blank.

The following are SMTP protocol error codes given in RFC821. For details, please ask the network administrator.

421 <domain> Service not available, closing transmission channel. This may be a reply to any command if the service knows it must shut down.
450 Requested mail action not taken: mailbox unavailable (e.g. mailbox busy).
451 Requested action aborted: local error in processing.
452 Requested action not taken: insufficient system storage.
500 Syntax error, command unrecognized. This may include errors such as command line too long.
501 Syntax error in parameters or arguments.
502 Command not implemented.
503 Bad sequence of commands.
504 Command parameter not implemented.
550 Requested action not taken: mailbox unavailable (e.g. mailbox not found, no access).
551 User not local; please try <forward-path>.
552 Requested mail action aborted: exceeded storage allocation.
553 Requested action not taken: mailbox name not allowed (e.g. mailbox syntax incorrect).
554 Transaction failed.

POP3 communications:

No standard error code definitions exist for the POP3 protocol. On this fax machine, the codes will be prefixed with the letter F, followed by a three-digit number denoting the following.

F001: Text print
F002: Text received but not printed
F010: POP protocol USER command error
F020: POP protocol PASS command error
F030: POP protocol RETR command error

F040: POP protocol DELE command error
F050: POP protocol TOP command error
F900: Network card I/F error
F910: TCP/IP or SMTP/POP not supported or allowed by network card
F920: Network card not ready; transmission request received while network card is initialising (redial)
F931: E-mail cannot be received (invalid TIFF)
F932: E-mail cannot be received (other than invalid TIFF)
F940: Memory full
F941: No new mail found in manual reception
F942: Command time-out
F950: Server communication error
F980: Aborted

Note: For service codes F001 and F002, the number of pages in the report will be left blank.

Transmission troubleshooting

Transmission fails; a communication error occurs.

- Are the IP ADDRESS, SubNetMask and Default Gateway settings correct?
- Has the SMTP server been configured correctly?
- Has the host name been registered?
- If using DNS, is the DNS server address correct?
- Check to make sure that the server is not down.
- If DNS is ON, some servers may cause an error.

When one-touch key is pressed with an email address assigned, a warning message appears on the LCD.

- Has an e-mail address been entered that has been assigned on this machine?

LCD shows message "OPTION BOARD ERROR".

- A network card I/F error has occurred - turn the power off and on again to recover.

MDN (or DSN) has been turned ON, but no confirmation has been returned.

- MDN: If the receiving Internet Fax/e-mail client is not capable of receiving MDN, there may not be a receipt.
- DSN: If the receiving server does not support DSN, there may not any confirmation received.
- Both MDN and DSN are sent as text-format messages. If the TEXT PRINT setting is OFF, they will not be printed out.

The Tiff file sent cannot be printed out on the receiver.

- Is the file sent at EX-FINE resolution or in coding mode other than MH? T.37 simple mode Internet Fax products support only the STD and FINE resolution settings and MH coding mode.

Reception troubleshooting

Reception fails; a communication error occurs.

- Are the IP ADDRESS, SubNetMask and Default Gateway settings correct?
- Has the POP server been configured correctly?
- If using DNS, is the DNS server address correct?
- Is the USER ID correct as registered on the POP server?
- Is the password correct as registered on the POP server?
- If APOP is on, it will cause a communication error on a POP server that does not support APOP.

Reception does not start.

- Has the POP interval been set at 0?
- If the TEXT PRINT setting is ON, messages cannot be received while a print alarm (no paper, cover open, paper jam, etc.) is on.
- Is there a sufficient free memory space? Images have to be first stored in memory and cannot be received if there is not enough space.

When receiving data manually, a warning message appears on the LCD.

- Is the POP server and USER ID registered?

The LCD shows message OPTION BOARD ERROR.

- A network card I/F error has occurred - turn the power off and on again to recover.

A communication error occurs during reception, and a report is printed out.

- The received file is not of a format supported by this machine.

The same mail is printed up repeatedly.

- Is 84:DELETE POP MSG setting TYPE2? Do not use other settings unless receive mail is received on a PC as well as on the fax machine. With the TYPE1 or OFF setting, the same mail is received repeatedly if the number of messages received exceeds the maximum number that can be logged by this Internet Fax (50). If this happens, access the mail server from the PC and delete all the mail. With the mail server empty, carry out a manual reception on the Internet Fax to delete the current log stored on it.

Data is sent from an email client on a PC to the InternetFAX, but the reception has failed.

- Is Tiff format used supported by this Internet Fax?
- If only a text has been sent, it will not be printed out unless the TEXT PRINT setting is ON.
- Some e-mail clients send e-mail using unusual formats which this fax machine cannot receive.

The fax machine prints out a large number of meaningless characters.

- It may be printing out Base64-encoded data. If this occurs frequently, change the TEXT PRINT setting to OFF.

Communication errors occur, and service code F020 is given each time.

- The POP server password may be wrong, causing the server to return authentification errors.

E-mail to fax troubleshooting

Data is sent using the format FAX=[telephone number]@[domain name], but it has not been delivered to the InternetFAX.

- The domain name (the part after @) used is incorrect. Consult with the network administrator about the correct domain entry.

The Internet Fax refuses to receive data.

- Are characters used other than numbers, +, #, *, P or - in the telephone number?
- Is the telephone number entered longer than 40 digits, the Internet Fax will not receive the transmission.
- Is the recipient's domain name registered on the Internet Fax?
- Is the format of the Tiff file being sent supported by this Interne Fax?

Text is sent to the Internet Fax, but it does not forward it.

- This fax machine does not forward text.

Data is forwarded by fax, but communication cannot be established..

- Are the fax's telephone line settings correct?

Network Printing

Printing documents

To print documents on this fax machine via the LAN, the appropriate software needs to be installed from the supplied CD-ROM and make the correct settings for the environment.

Note: When printing on transparencies, set the Media Type to Light, use the manual feed method and set the machine output for face up stacking. Refer to the user's guide for the fax machine for these adjustments. The recommended transparency type is 3M CG2300.

A brief description of each of the procedures required for supported operating systems follows.

To install network card utilities, it is recommend that to select the Quick Setup option where it is available.

Note: The Hyper-W Printer driver supports only network printing. Printing via the parallel port is not supported. Local printing through the parallel port requires a different driver. For further details, please enquire through an authorized supplier.

Procedure for supported operating systems

NetWare

Recommended procedure:

1. Install printer driver.
2. Install network card utility.
3. Configure network card.

The NetWare server has two modes; printer server mode and remote printer mode. The network card supports either mode. Using NetWare requires that the fax machine should be attached as a printer under NetWare control. For detailed configuration, see the utilities manual on the CD-ROM.

Windows NT4.0/2000

Recommended procedure:

1. Install printer driver.
2. Install network card utility.
3. Configure network card.

When printing from Windows NT4.0/2000 please use LPR (Microsoft TCP/IP Printing) included in Windows NT4.0/2000 Add the LPR port as the driver output port and assign it the IP Address configured for network card. For details, see the utilities manual in CD-ROM.

TCP/IP should be added to Windows NT4.0/2000 because it is used for LPR.

Note: A warning message may be received about authentification while installing the driver on Windows2000. Please ignore this message if it appears, as it will not cause any problem with the installation of the driver.

Windows 95/98

Recommended procedure:

1. Install printer driver.
2. Install network card utility.
3. Install LPR utility.
4. Configure network card.

When printing directly from Windows 95/98, the LPR utility should be installed from the supplied CD-ROM. For details see the utilities manual in CD-ROM.

TCP/IP must be installed in Windows 95/98 in order to use LPR.

Windows 3.1

Recommended procedure:

1. Install printer driver.
2. Run SETUP.EXE from the Win31 directory on the supplied CD-ROM.

3. Configure network card.

When printing from Windows 3.1, a NetWare Server is required as Windows 3.1 is not a network operating system. Printing via LPR from Windows 3.1 connected to the network with other commercial TCP/IP protocols, is not assured.

Other operating systems

Other operating systems, such as Macintosh or UNIX, are not supported.

Configuring from network utilities

The network card configurations may be altered from a PC via the network using the utilities on CD-ROM. These can be accessed from the installer. With these utilities, TCP/IP and NetWare parameters may be configured. For details, see the Utilities Manual.

Note: When using the above utilities, the setup screen for EtherTalk, which the fax machine does not support, will be displayed. Please set EtherTalk "Disable" to prevent it from being used.

Configuration

Network settings can be altered by selecting 93:NETWORK SETTINGS. To print from Windows using LPR, it is necessary to set the IP ADDRESS. This is not required if printing from NetWare only, but it is necessary for using Internet Fax functions.

- 1: IP ADDRESS - Sets the IP address.
- 2: SUBNETMASK - Sets the subnet mask.
- 3: DEFAULT GATEWAY - Sets the default gateway address.

The following three settings are specific to Network Printing.

- 80:LAN PRINT T.O. (5 sec., 30 sec., 5min.) - It is impossible to judge whether printing data is not being transmitted due to network delay or the end of the data stream. This time-out configuration allows the device to cancel a print job when no printing data can be found after a specified time has elapsed since the last data was submitted. If the default configuration is acceptable, please do not alter it.

- 81:PAPER SIZE CHECK (ON, OFF) - With this configuration ON, an alarm will be displayed at the LCD when the paper size specified from the PC and that of the tray specified by fax machine are different. If this alarm is displayed, set the correct paper size in the specified tray. Printing will begin when the tray is closed. After the printing, set the same recording paper as configured for the tray, or alter the tray configuration to the correct paper size. With this configuration OFF, printing will be conducted neglecting the paper size difference.
- 82: AUTO TRAY SW. (ON, OFF) - With this configuration ON, printing will be done using paper in another tray when paper is out in the 1st or 2nd tray and paper size of the1st and 2nd tray is the same.

Banner output

This fax machine supports TEXT-style Banner of NetWare 3.x and NetWare 4.x. Note that the machine only supports the ASCII codes listed below. Any ASCII code not supported will be replaced by a space.

	00	10	20	30	40	50	60	70	80	90	A0	B0	C0	D0	E0	F0
0			SP	0	@	P	`	p								
1			!	1	A	Q	a	q								
2			“	2	B	R	b	r								
3			#	3	C	S	c	s								
4			$	4	D	T	d	t								
5			%	5	E	U	e	u								
6			&	6	F	V	f	v								
7			‘	7	G	W	g	w								
8			(	8	H	X	h	x								
9			)	9	I	Y	i	y								
A			*	:	J	Z	j	z								
B			+	;	K	[	k	{								
C			,	<	L	\	l	|								
D			-	=	M	]	m	}								
E			.	>	N	^	n	~								
F			/	?	O	_	o									

If a NetWare banner cannot be printed, alter the configuration at the PC to "No Banner Used", or at NetWare Server to "No Banner Sent". (If in doubt ask the NetWare network administrator for details.)

Although the network card supports FTP and LPR banners, when a problem occurs with banner printing, set the banner to "NO" with the affixed utilities.

Troubleshooting

Option board error

When OPTION BOARD ERROR is displayed on the fax machine LCD, an error may have been caused at the interface with the network card. In this case, turn off the fax machine, check that the network card is correctly installed and power up again.

LAN data error

When LAN DATA ERROR is displayed on the fax LCD, there may be a problem in the printing data transmitted via the network. As the printing data will be cancelled, please conduct the printing again. If this error re-occurs while printing documents the fault may be a paper jam. Please clear the paper jam.

Note: When a print job was cancelled on a PC, LAN DATA ERROR may be displayed. This is because defective data may have been transmitted to the fax machine.

Network problem

If any other printing problems occur other than the errors mentioned in this section, refer to the utilities manual in the CD-ROM.

Appendix A - Operating Instructions

General conditions

To use Internet Fax, a network card must be installed in this machine and connected to a LAN. The network card for this machine can be connected to a 10BaseT or 10/100baseTX LAN. Also, to make a LAN connection, an IP Address, Subnet Mask and Default Gateway must be configured on this fax machine. Ask the network administrator for these settings.

If the LAN uses a DHCP server, it is not necessary to configure these settings as the server will do it automatically.

Internet Fax settings can be configured either using the network tool or on the fax machine itself, but DHCP settings are supported by the network tool only.

After setting the correct IP Address, Subnet Mask and Default Gateway, configure the fax machine for Internet Fax transmission/reception.

Internet fax transmission

To send an Internet Fax message, a mail server is required from which to send email. Please consult the network administrator about the settings listed below, which are required in order to make a connection to the mail server.

These settings are similar to those of popular mail clients such as Netscape Messenger, Outlook and Eudora.

- SMTP Server Address /Name - Enter the SMTP server name or IP Address. If entering the server's IP Address, be sure to type the dots (full-stops) dividing the numbers as well (e.g., 192.168.1.1). Enter a server name only if a DNS server has been configured.
- DNS server's IP ADDRESS - This setting is not required if the SMTP server has been specified by its IP ADDRESS. A DNS server can convert a server name into an IP ADDRESS.

- HOST NAME - Enter the host name of this machine. If the host name is not known, enter the e-mail address of this machine instead.
- E-mail Address - Enter the e-mail address assigned to this machine.

Transmission can be carried out when the above settings have been configured.

To send a fax, place a document on the machine and press the one-touch button where the e-mail address of the recipient has been registered. The document will be scanned into memory and before transmission.

The data will be converted into a TIFF file and sent to the recipient.

Internet fax reception

To receive an Internet Fax message, a mail server is required for sending e-mail. Please consult the network administrator about the settings required to connect to the mail server.

- POP Server Address /Name - Enter the POP server name or IP Address. If entering the server's IP Address, be sure to type the dots (full-stops) dividing the numbers as well (e.g., 192.168.1.1). Enter a server name only if a DNS server has been configured.
- DNS server's IP ADDRESS - This setting is not required if the POP server has been specified by its IP ADDRESS. DNS server can convert a server name into an IP ADDRESS.
- POP server user name - Enter the user name assigned to this machine for accessing the POP server.
- POP server password - Enter the password assigned to this machine for accessing the POP server.

The fax machine is ready to receive Internet Fax messages when the above settings have been configured.

To receive a fax message, the fax machine will access the server automatically at regular intervals according to the POP Interval Time setting. If there is mail, the fax machine will print it out automatically. Please note that this fax machine can receive TIFF files and text-format mail only. It cannot receive files in any other format.

Note: Internet Fax can only accept Tiff format to RFC2301 standard (TIFF S).

Accessing different settings

To access different settings on this fax machine, refer to the table below

Setting item	Operation
IP Address	MENU+9+3+1
Subnet Mask	MENU+9+3+2
Default Gateway	MENU+9+3+3
SMTP Server Name/Address	MENU+9+3+4
POP Server Name/Address	MENU+9+3+5
POP User ID	MENU+9+3+6
POP Password	MENU+9+3+7
Domain Name Service Primary Server	MENU+9+3+8
Domain Name Service Secondary Server	MENU+9+3+9
HOST Name	MENU+9+3+10
Fax Email Address	MENU+9+3+11

Appendix B - Mail Server Settings

To use the gateway service of e-mail to Internet Fax to G3/G4 fax machine, the mail server and the DNS server must be configured to forward e-mail to the Internet Fax. This document gives some examples of settings for forwarding mail to the Internet Fax.

The settings given here are only examples. Servers do not necessarily have to be configured as shown in order to use the gateway service.

The domain name, host names and IP addresses given in this text are for example only. These values must be set in accordance with the network setup being used.

The setting changes explained here can be made only by a network administrator.

DNS server

Firstly, register the Internet Fax onto the DNS server. In this example, the settings for a type of DNS server called BIND run on UNIX are explained.

Assume that there is an existing network of the following setup:

1. Network domain name:abc.com
2. Host name of the mail server in this domain:mail.abc.com
3. IP address of this mail server:192.168.001.100
4. Host name of the DNS server in this domain:dns.abc.com
5. IP address of this DNS server:192.168.001.101
6. IP address of the client PC:192.168.001.050
7. Host name of the client PC:user.abc.com

Now, install the Internet Fax on this network.

1. Host name of the Internet Fax: fax.abc.com
2. IP address of the Internet Fax:192.168.001.105

Add a record of the Internet Fax on the zone file of the DNS server (dns.abc.com).

Address (A) record:

mail.abc.com.	IN	A	192.168.1.100
dns.abc.com.	IN	A	192.168.1.101
user.abc.com.	IN	A	192.168.1.50
fax.abc.com.	IN	A	192.168.1.105

Also, add a PTR record of the fax machine to the reverse zone file.

Pointer (PTR) record:

100.1.168.192.in-addr.arpa.IN	PTR	mail.abc.com.
101.1.168.192.in-addr.arpa.IN	PTR	dns.abc.com.
050.1.168.192.in-addr.arpa.IN	PTR	user.abc.com.
105.1.168.192.in-addr.arpa.IN	PTR	fax.abc.com.

When all the records have been updated, restart the DNS server.

After the above configuration has been made, all mail addressed to <xxxx@fax.abc.com> will be forwarded to the Internet Fax.

Mail server

In many cases, the DNS server configuration explained above is all that is required to use the e-mail to fax relay service. However, some mail servers are configured to process all mail addressed to hosts belonging to their domain as mail to themselves. If mail server mail.abc.com has been set up in this way, it will regard mail to xxxx@fax.abc.com as mail to one of its users and will not forward it to the Internet Fax. To prevent this, it is necessary to configure the mail server so that it will not process mail addressed host fax.abc.com. Please refer to the network administrator for the procedure on how to configure the mail server.